General

Guideline Title

Recommendations on screening for colorectal cancer in primary care.

Bibliographic Source(s)

Canadian Task Force on Preventive Health Care. Recommendations on screening for colorectal cancer in primary care. CMAJ. 2016 Mar 15;188(5):340-8. [44 references] PubMed

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: Colorectal cancer screening. Recommendation statement from the Canadian Task Force on Preventive Health Care. CMAJ 2001;165:206-8. [20 references]

This guideline meets NGC's 2013 (revised) inclusion criteria.

Recommendations

Major Recommendations

The grades of recommendations (strong, weak) and grades of evidence (high, moderate, low, very low) are defined at the end of the "Major Recommendations" field.

Summary of Recommendations for Clinicians and Policy Makers

Screening in Adults Aged 50 to 74

The Task Force recommends screening adults aged 60 to 74 years for colorectal cancer with fecal occult blood testing (FOBT) (either guaiac fecal occult blood testing [gFOBT] or fecal immunochemical testing [FIT]) every two years or flexible sigmoidoscopy (FS) every 10 years. (Strong recommendation; moderate-quality evidence)

The Task Force recommends screening adults aged 50 to 59 years for colorectal cancer with FOBT (gFOBT or FIT) every two years or FS every 10 years. (Weak recommendation; moderate-quality evidence)

Screening in Adults Aged 75 and Older

The Task Force recommends not screening adults aged 75 years and older for colorectal cancer. (Weak recommendation; low-quality evidence)

Screening Using Colonoscopy

The Task Force recommends not using colonoscopy as a primary screening test for colorectal cancer. (Weak recommendation; low-quality evidence)

Definitions

Grading of Recommendations Assessment, Development and Evaluation (GRADE) Working Group Grades of Evidence

High quality — Further research is very unlikely to change confidence in the estimate of effect.
Moderate quality — Further research is likely to have an important impact on confidence in the estimate of effect and may change the estimate.
Low quality — Further research is very likely to have an important impact on confidence in the estimate of effect and is likely to change the estimate.
Very low quality — Any estimate of effect is very uncertain.

Grading of Recommendations

- Strong recommendations are those for which the Task Force is confident that the desirable effects of an intervention outweigh its undesirable effects (strong recommendation for an intervention) or that the undesirable effects of an intervention outweigh its desirable effects (strong recommendation against an intervention). A strong recommendation implies that most people will be best served by the recommended course of action.
- Weak recommendations are those for which the desirable effects probably outweigh the undesirable effects (weak recommendation for an intervention) or undesirable effects probably outweigh the desirable effects (weak recommendation against an intervention) but appreciable uncertainty exists. Weak recommendations result when the balance between desirable and undesirable effects is small, the quality of evidence is lower, and there is more variability in the values and preferences of patients. A weak recommendation implies that most people would want the recommended course of action, but many would not. Clinicians must recognize that different choices will be appropriate for individual, so they must help each person arrive at a management decision consistent with his or her own values and preferences. Policy-making will require substantial debate and involvement of various stakeholders.

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

Colorectal cancer

Guideline Category

Prevention

Screening

Clinical Specialty

Colon and Rectal Surgery

Family Practice

Gastroenterology

Internal Medicine

Oncology

Intended Users

Advanced Practice Nurses

Allied Health Personnel

Nurses

Physician Assistants

Physicians

Guideline Objective(s)

To make recommendations on intervals and screening techniques for colorectal cancer in asymptomatic patients

Target Population

Asymptomatic adults aged 50 years and older who are not at high risk for colorectal cancer

Note: The recommendations guidelines do not apply to those with previous colorectal cancer or polyps, inflammatory bowel disease, signs or symptoms of colorectal cancer, history of colorectal cancer in one or more first-degree relatives, or adults with hereditary syndromes predisposing to colorectal cancer (e.g., familial adenomatous polyposis, Lynch syndrome).

Interventions and Practices Considered

1. Fecal occult blood testing (FOBT)
    - Guaiac fecal occult blood testing (gFOBT)
    - Fecal immunochemical testing (FIT)
2. Flexible sigmoidoscopy

Note: The use of colonoscopy as a primary screening test and screening adults aged 75 years and older were recommended against.

Major Outcomes Considered

- All-cause mortality
- Colorectal cancer mortality
- Incidence of late-stage (stage III or IV, or Dukes C or D) colorectal cancer

Methodology

Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Primary Sources)

Hand-searches of Published Literature (Secondary Sources)

Searches of Electronic Databases

Searches of Unpublished Data

Description of Methods Used to Collect/Select the Evidence

Note from the National Guideline Clearinghouse (NGC): A systematic review was prepared by the McMaster Evidence Review and Synthesis Centre (ERSC) Team for the Canadian Task Force on Preventive Health Care (CTFPHC) (see the "Availability of Companion Documents" field).

Search Strategy

For the key questions the systematic review team searched Medline, EMBASE and Cochrane Central from January 2000 to November 21, 2013 (see Appendix 1 in the evidence review). The search dates were selected based on the last published colorectal cancer guideline by the Canadian Task Force on Preventive Health Care (CTFPHC) in 2001. This search was peer reviewed using the peer review of electronic search strategies (PRESS) method. Reference lists of included studies and on topic systematic reviews were checked for possible citations missed by the search. The review team also did a Google search for grey literature for Canadian sources of colorectal cancer data. For contextual questions they searched Medline for on topic papers published after 2007.

Study Selection

The titles and abstracts of papers considered for the key question and sub questions were reviewed in duplicate by members of the synthesis team; any article marked for inclusion by either team member went on to full text rating. Full text inclusion was done independently by two people. All disagreements were resolved through discussions rather than relying on a particular level of kappa score to indicate when discussions were no longer necessary. The inclusion results were reviewed by a third person. For papers located in the contextual questions search, title and abstract screening was completed by one person.

Inclusion and Exclusion Criteria

Language

The published results of studies had to be available in either English or French.

Population

The population of interest for this review was asymptomatic adults 18 years and older who were not at high risk of colorectal cancer. Excluded from this review were adults who were at high risk, defined as those with familial adenomatous polyposis (FAP), hereditary nonpolyposis colorectal cancer (HNPCC), history of inflammatory bowel disease (IBD), personal history of polyps (any polyp) or colorectal cancer; patients with symptoms suggesting underlying colorectal cancer (such as rectal bleeding or iron deficiency anemia), or those with known genetic mutations associated with increased colorectal cancer risk.

Interventions

Screening with colonoscopy, computed tomography (CT) colonoscopy, guaiac fecal occult blood testing (gFOBT), immunochemical fecal occult blood testing (iFOBT), flexible sigmoidoscopy (FS), barium enema (BE), digital rectal exam (DRE), fecal deoxyribonucleic acid (DNA), and other identified tests. Excluded were case-finding or surveillance tests. Follow-up tests were excluded except for the outcome of harms.

Settings

Settings were limited to primary care or settings to which a primary care physician could refer as in the case of colonoscopy, CT colonoscopy and flexible sigmoidoscopy.

Study Design and Comparison Groups

To answer the questions about the benefits of screening, only randomized controlled trials (RCTs) with comparison groups of no screening or comparison between tests were eligible for inclusion. For the question on test properties, acceptable study designs included RCTs, cohort (with a comparison) and case control studies. Any study design (with or without comparison groups) was considered acceptable to answer the questions about adverse events and the contextual questions.

Outcomes

To answer the question of benefits of screening, the outcomes of interest included colorectal cancer mortality, all-cause mortality and incidence of late stage colorectal cancer. Late stage colorectal cancer has been defined as stage III or IV or Duke's C or D. The outcome of interest for the harms of screening included complications (bleeding or perforation) of the test or the follow-up test, false positive, false negative, and over-diagnosis. To answer the test properties question the outcome of interest was any stage colorectal cancer.

Timeframe

There was no minimum follow-up time necessary for inclusion in our evidence summary.

Contextual Questions

The purpose of the contextual questions was to help the guideline panel decide if there are subgroups of the Canadian population for whom there is a great burden of the disease or for whom there might be reasons that screening does not work well. The CTFPHC was also interested in understanding patient preferences and values regarding screening. As such a targeted search was undertaken and selected articles were incorporated in the evidence review.

Number of Source Documents

Summary of the Literature Search for Key Questions

The search for the key questions located 13,257 unique citations that were screened at title and abstract (see Figure 2 in the systematic review [see the "Availability of Companion Documents" field]). Seventy-one systematic reviews were identified by the review team. The reference lists of on-topic systematic reviews were also searched; three papers were added to the database as a result.

Summary of the Included Studies

A total of 87 studies were identified to answer the key questions that met the inclusion criteria for the review; nine RCTs for the benefits of screening; 40 studies for test properties; and 46 studies for harms of screening or harms of follow-up tests after screening. (Search Results: See Figure 2 in the systematic review.)

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Grading of Recommendations Assessment, Development and Evaluation (GRADE) Working Group Grades of Evidence

High quality — Further research is very unlikely to change confidence in the estimate of effect.
Moderate quality — Further research is likely to have an important impact on confidence in the estimate of effect and may change the estimate.
Low quality — Further research is very likely to have an important impact on confidence in the estimate of effect and is likely to change the estimate.
Very low quality — Any estimate of effect is very uncertain.

Methods Used to Analyze the Evidence

Meta-Analysis

Review of Published Meta-Analyses

Systematic Review with Evidence Tables

Description of the Methods Used to Analyze the Evidence

Note from the National Guideline Clearinghouse (NGC): A systematic review was prepared by the McMaster Evidence Review and Synthesis Centre (ERSC) Team for the Canadian Task Force on Preventive Health Care (CTFPHC) (see the "Availability of Companion Documents" field).

Data Abstraction

For each study used to answer any key question, review team members extracted data about the population, the study design, the intervention, the analysis and the results for outcomes of interest. For each study, one team member completed full abstraction (study characteristics, risk of bias assessment, outcome data) using electronic forms housed in a web-based systematic review software program. A second team member then verified all extracted data and ratings; disagreements were resolved through discussion and/or third party consultation when consensus could not be reached. Prior to performing meta-analyses, tables were produced for each outcome and all data were checked in a third round of verification.

Assessing Risk of Bias

Arriving at a Grading of Recommendations Assessment, Development and Evaluations (GRADE) rating for a body of evidence requires a preliminary assessment of the risk of bias or study limitations for the individual studies. All randomized controlled trials (RCTs) included to answer the effectiveness of screening question were assessed using the Cochrane Risk of Bias tool. This rating tool covers six domains: sequence generation; allocation concealment; blinding of participants, personnel and outcome assessors; incomplete outcome reporting; selective outcome reporting; and other risk of bias. Information to determine risk of bias was abstracted from the primary methodology paper for each study and any other relevant published papers. For each study, one team member completed the initial ratings which were then verified by a second person; disagreements were resolved through discussion and/or third party consultation when consensus could not be reached. To assign a high or low risk of bias rating for a particular domain the systematic review team looked for explicit statements or other clear indications that the relevant methodological procedures were or were not followed. In the absence of such details the review team assigned unclear ratings to the applicable risk of bias domains. To determine the overall risk of bias rating for an outcome the review team considered all domains, however when the level of bias between domains was not consistent greater emphasis was placed on randomization, allocation concealment and blinding because those represented most significant sources of introducing bias to a RCT and hence could lead to biased estimates of outcome findings and conclusions. Table 1 in the evidence review summarizes the risk of bias ratings applied to the RCTs included in this review.

Assessing Strength or Quality of the Evidence

The strength of the evidence was determined based on the GRADE system of rating the quality of evidence using GRADEPro software. This system of assessing evidence is widely used and is endorsed by over 40 major organizations including the World Health Organization, Centers for Disease Control and Prevention, and the Agency for Healthcare Research and Quality. The GRADE system rates the quality of a body of evidence as high, moderate, low or very low; each of the four levels reflects a different assessment of the likelihood that further research will impact the estimate of effect (see the "Rating Scheme for the Strength of the Evidence" field).

A GRADE quality rating is based on an assessment of five conditions: (1) risk of bias (limitations in study designs), (2) inconsistency (heterogeneity) in the direction and/or size of the estimates of effect, (3) indirectness of the body of evidence to the populations, interventions, comparators and/or outcomes of interest, (4) imprecision of results (few participants/events/observations, wide confidence intervals), and (5) indications of reporting or publication bias. Grouped RCTs begin with a high quality rating which may be downgraded if there are serious or very serious concerns across the studies related to one or more of the five conditions. For this review, key data were entered into the GRADEPro software along with the quality assessment ratings to produce two analytic products for each outcome and the comparisons of interest: (1) a GRADE Evidence Profile Table and (2) a GRADE Summary of Findings Table (presented in Evidence Sets 1 and 2). There was no assessment of the quality of the evidence for contextual questions.

Data Analysis

To perform meta-analysis for the benefits of colorectal cancer screening the review team utilized the number of events; proportion or percentage data from included RCTs to generate the summary measures of effect in the form of risk ratio (RR) using the DerSimonian and Laird random effects models with inverse variance method. The subgrouping in meta-analysis was based on the type of screening method used such as guaiac fecal occult blood testing (gFOBT), immunochemical fecal occult blood testing (iFOBT) and flexible sigmoidoscopy (FS). The review team found no RCTs that met inclusion criteria for the benefits of colorectal cancer screening using colonoscopy and computed tomography (CT) colonography. The Cochrane's Q (α=0.10) and I^2 statistic was employed to quantify the statistical heterogeneity between studies, where $p<0.05$ indicates a high level of statistical heterogeneity between studies.

For benefits of colorectal cancer screening (outcomes of colorectal cancer-specific mortality, all-cause mortality and incidence of late stage colorectal cancer) the review team calculated absolute risk reduction (ARR) and number needed to screen (NNS) for studies which should have a

beneficial effect on mortality and incidence of late stage colorectal cancer. NNS was calculated using the absolute numbers presented in the GRADE tables. GRADE estimates the absolute number per million using the control group event rate and risk ratio with the 95% confidence interval obtained from the meta-analysis.

For harms of colorectal cancer screening and follow-up tests the review team used the rates/proportions along with 95% confidence intervals across the studies and pooled them using the DerSimonian and Laird random effects models with inverse variance method to generate the summary measures of effect. The binomial confidence interval for each proportion/rate was calculated using "Wilson score interval" method to allow for inclusion of studies reporting zero events in to meta-analysis. The primary grouping in meta-analyses was based on the type of screening method used such as gFOBT, iFOBT, FS, screening colonoscopy, follow-up colonoscopy and CT colonography. The harms analyses for FS and colonoscopy were further sub grouped depending on base population, i.e., whether the reported events were based on number of patients in study or number of colonoscopies performed.

The data for diagnostic test accuracy such as positive predictive value (PPV), negative predictive value (NPV), sensitivity, specificity and likelihood ratios was pooled descriptively using median with range approach. The studies were primarily subgrouped based on screening test type such as gFOBT, iFOBT and FS. The test properties data for iFOBT was further sub grouped based on test type and cut points of 50 ng/ml, 70 to 75 ng/ml and 100 ng/ml. Guaiac FOBT does not have a cut point so there was no subgrouping of these data.

The analyses were performed using Review Manager ver. 5.1 software and STATA ver. 12. The studies not included in the meta-analyses were described narratively.

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

Note from the National Guideline Clearinghouse (NGC): A systematic review was prepared by the McMaster Evidence Review and Synthesis Centre (ERSC) Team for the Canadian Task Force on Preventive Health Care (CTFPHC) (see the "Availability of Companion Documents" field).

The CTFPHC is an independent panel of clinicians and methodologists that makes recommendations about clinical manoeuvres aimed at primary and secondary prevention (www.canadiantaskforce.ca). The recommendations were developed by a task force work group, in collaboration with the Public Health Agency of Canada and the National Colorectal Cancer Screening Network. A representative of the network was a member of the task force work group, and the guideline protocol, systematic review and draft guideline all underwent external review by experts and other stakeholders. The task force used the Grading of Recommendations Assessment, Development and Evaluation (GRADE) system to determine the quality of evidence and strength of recommendations (see the "Rating Scheme for the Strength of the Evidence" and "Rating Scheme for the Strength of the Recommendations" fields). Patients' preferences were sought in developing the systematic review (see "Values and preferences" section in the original guideline document) and in formulating the knowledge translation tools that accompany this guideline.

Analytic Framework and Key Questions

The analytic framework for this prevention focused review is presented in Figure 1 in the systematic review (see the "Availability of Companion Documents" field).

Key Questions

1. What is the effectiveness of each colorectal cancer screening test[i] to reduce colorectal cancer-specific mortality, all-cause mortality, or incidence of late stage colorectal cancer in asymptomatic adults who are not at high risk for colorectal cancer?[ii]
    a. What is the optimal age to start and stop screening and the optimal screening interval of asymptomatic adults not at high risk for colorectal cancer?
    b. What is the evidence that the clinical benefits of screening differ for the various screening tests, or by subgroups that may influence the underlying risk of colorectal cancer?[iii]
2. What are the sensitivity, specificity, positive and negative predictive values, and positive and negative likelihood ratios of the colorectal cancer screening tests to detect colorectal cancer?
3. What is the incidence of harms[iv] of screening for colorectal cancer in adults not at high risk for colorectal cancer? What is the evidence that

the harms of screening differ for the various screening tests or by subgroups that may influence the underlying risk of colorectal cancer?

Contextual Questions

1. What are the patient preferences and values for screening for colorectal cancer?
2. What is the evidence for a higher burden of disease, a differential treatment response, differential performance, or barriers to implementation of colorectal cancer screening in the Aboriginal population, other ethnic populations, rural or remote populations, women, or the elderly?
3. What risk assessment tools are identified in the literature to assess the risk of colorectal cancer?
4. What are the cost-effectiveness and resource implications of screening for colorectal cancer?

[i]Screening tests include colonoscopy, flexible sigmoidoscopy (FS), computed tomography (CT) colonography, guaiac fecal occult blood test (gFOBT), fecal immunochemical testing (FIT), fecal deoxyribonucleic acid (DNA) testing, and other tests identified in the literature search.

[ii]Populations at high risk of colorectal cancer (see Table 1 in the systematic review) will be excluded, such as those with prior colorectal cancer or polyps, signs/symptoms suggesting underlying colorectal cancer, familial adenomatous polyposis, or hereditary non-polyposis colorectal cancer.

[iii]Characteristics that may increase risk within the population covered by the guideline include older age, obesity, Ashkenazi Jewish ethnicity, high alcohol consumption, physical inactivity, smoking, and low-fibre diet.

[iv]Complications of the screening test or follow-up test, false-positive, false-negative, overdiagnosis

Grading of Recommendations

Recommendations are graded according to the Grading of Recommendations Assessment, Development and Evaluation (GRADE) system. GRADE offers two strengths of recommendation: strong and weak. The strength of recommendations is based on the quality of supporting evidence, the degree of uncertainty about the balance between desirable and undesirable effects, the degree of uncertainty or variability in values and preferences, and the degree of uncertainty about whether the intervention represents a wise use of resources.

Rating Scheme for the Strength of the Recommendations

Grading of Recommendations

- Strong recommendations are those for which the Canadian Task Force on Preventive Health Care (CTFPHC) is confident that the desirable effects of an intervention outweigh its undesirable effects (strong recommendation for an intervention) or that the undesirable effects of an intervention outweigh its desirable effects (strong recommendation against an intervention). A strong recommendation implies that most people will be best served by the recommended course of action.
- Weak recommendations are those for which the desirable effects probably outweigh the undesirable effects (weak recommendation for an intervention) or undesirable effects probably outweigh the desirable effects (weak recommendation against an intervention) but appreciable uncertainty exists. Weak recommendations result when the balance between desirable and undesirable effects is small, the quality of evidence is lower, and there is more variability in the values and preferences of patients. A weak recommendation implies that most people would want the recommended course of action, but many would not. Clinicians must recognize that different choices will be appropriate for individual, so they must help each person arrive at a management decision consistent with his or her own values and preferences. Policy-making will require substantial debate and involvement of various stakeholders.

Cost Analysis

Economic Implications

The task force examined the cost-effectiveness of screening for colorectal cancer as a contextual question. The systematic review found two Canadian modelling studies, and the Canadian Partnership Against Cancer used the Cancer Risk Management Model (version 2.2) to run specific colorectal cancer screening scenarios on behalf of the task force as an ancillary analysis. Detailed information on the findings of the Canadian Partnership Against Cancer model can be found in Appendix 5, available at http://www.cmaj.ca/content/188/5/340/suppl/DC1 (see also the "Availability of Companion Documents" field). The first economic evaluation concluded that both incidence and mortality from colorectal cancer were greatly reduced with the use of three screening strategies compared with no screening: low-sensitivity guaiac fecal occult blood testing (gFOBT) and fecal immunochemical testing (FIT) performed annually as well as colonoscopy performed every 10 years. It also concluded that all screening strategies are cost-effective but that low-sensitivity FIT performed annually or colonoscopy performed

every 10 years offered the best value in Canada.

The second economic evaluation concluded that screening with annual FIT with midtest performance characteristics (sensitivity 0.81, specificity 0.96) reduces the number of cancers in the lifetimes of 100,000 average-risk patients by 71% and the number of deaths from colorectal cancer by 74% while saving Can$68 per person, compared with no screening. Of note, the median accuracy for screening tests for colorectal cancer identified in the systematic review supporting this guideline (sensitivity 0.81, specificity 0.95) is in line with the midtest performance characteristics identified in this economic evaluation.

Method of Guideline Validation

Comparison with Guidelines from Other Groups

External Peer Review

Description of Method of Guideline Validation

A representative of the National Colorectal Cancer Screening Network was a member of the task force work group, and the guideline protocol, systematic review and draft guideline all underwent external review by experts and other stakeholders.

Table 2 in the original guideline document provides a comparison between the current and previous task force guidelines, as well as recommendations from the U.S. Preventive Services Task Force (USPSTF).

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified and graded for each recommendation (see the "Major Recommendations" field).

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Reduction in colorectal cancer mortality

Potential Harms

- False-positive and false-negative results were the only direct harms reported for guaiac fecal occult blood testing (gFOBT) and fecal immunochemical testing (FIT) in the included studies.
- Harms following flexible sigmoidoscopy (FS) were rare (intestinal perforation occurred in 0.001% of patients, minor bleeding in 0.05%, major bleeding in 0.009% and death in 0.015%).

Qualifying Statements

Qualifying Statements

The views of the funding bodies have not influenced the content of the guideline; competing interests have been recorded and addressed. The views expressed in this article are those of the authors and do not represent those of the Public Health Agency of Canada. The Cancer Risk Management Model used in developing the economic implications of screening in this guideline has been made possible through a financial

contribution from Health Canada, through the Canadian Partnership Against Cancer. The assumptions and calculations underlying the simulation results were prepared by the task force, and the responsibility for the use and interpretation of these data is entirely that of the authors. The Ontario Case Costing Initiative assumes no responsibility or liability arising from any errors or from the use of any information generated from this tool and contained within this guideline.

Gaps in Knowledge

Trials investigating the mortality benefit of screening colonoscopy are underway (estimated completion dates indicated): The Northern-European Initiative on Colorectal Cancer (2026); Screening of Swedish Colons (SCREESCO) (2034); Barcelona (2021); and Colonoscopy Versus Fecal Immunochemical Test in Reducing Mortality From Colorectal Cancer (CONFIRM) (2027) (www.ClinicalTrials.gov). Trials showing a mortality benefit of colonoscopy, fecal DNA assays and other tests are needed before they can be recommended for population-based screening. In addition, research about how to increase access to flexible sigmoidoscopy and colonoscopy in Canada would be useful to inform population-based screening with these tests. More data are needed on the effectiveness of fecal immunochemical testing (FIT) in all age groups, on all screening tests in populations under 60 or over 74 years of age and on the impact of screening on overdiagnosis and overtreatment. Monitoring for these harmful outcomes at a national level is recommended to address this research gap.

Implementation of the Guideline

Description of Implementation Strategy

Considerations for Implementation

The weak recommendation for screening people aged 50 to 59 years versus the strong recommendation for screening people aged 60 to 74 is based on the less favourable balance of benefits to harms for the former, and implies that the decision to be screened will require more discussion among people aged 50 to 59 years. The task force has produced decision aids to assist practitioners with such discussions (available at www.canadiantaskforce.ca/ctfphc-guidelines/2015-colorectal-cancer/clinician-recommendation-table [see also the "Availability of Companion Documents" field]). Screening will be more appropriate for patients aged 50 to 59 who are interested in a small absolute reduction in the risk of death from colorectal cancer and who are less concerned about the potential harms and inconvenience of testing. In contrast, patients aged 50 to 59 who are more concerned about harms and inconvenience could make a valid decision to defer screening until age 60 or older.

Fecal immunochemical testing (FIT) is more sensitive and specific than both guaiac fecal occult blood testing (gFOBT) and high sensitivity gFOBT, and is the primary screening test in all provinces with the exception of Ontario and Manitoba. Alberta is the most recent jurisdiction to discontinue the use of gFOBT (as of January 2014) and is now using FIT exclusively. Given FIT's increased sensitivity, screening programs could be designed to have a high cut-off to reduce the false-positive rate but still provide appropriate screening.

Limited access to flexible sigmoidoscopy (FS) may result in most Canadians being screened appropriately using FIT or gFOBT. However, patients who wish to be screened but prefer less frequent testing (every 10 yr), or are averse to stool testing with fecal occult blood testing (FOBT), may be more likely to choose FS rather than FOBT. Although FS is not frequently performed for screening in many jurisdictions, it may warrant further consideration because it can be completed in the same facilities as colonoscopy and using similar equipment, but without the requirement of a specialist, such as a gastroenterologist. As an example, primary care providers can refer patients for FS through Ontario's Registered Nurse Flexible Sigmoidoscopy program. The UK government is also implementing a similar program at special screening centres in England aimed at adults aged 55 and older. In the event that any polyps are found, they are usually removed immediately.

As noted, harms following FS are rare. However, although FS is less resource-intensive than colonoscopy, program planners would still need to consider the implications of establishing screening facilities, training of providers, the bowel preparation required by patients and the resources needed for FS as compared with FOBT.

Values and Preferences

Three reviews and 20 primary studies about values and preferences related to colorectal cancer screening were identified in the systematic review. A Canadian survey about patients' preferences indicated that invasiveness, level of preparation required and pain from the test were concerns. A U.S. study revealed that patients' highest priorities for screening were preventing cancer (55%), avoiding test adverse effects (17%), minimizing false-positive results (15%), and the combination of screening frequency, test preparation and test procedures (14%). When patients are choosing between different screening tests, sedation needs, perceived test accuracy, confidence in completing the test, bowel preparation and frequency of

tests are factors that may influence their decision.

Suggested Performance Measures

Suggested performance measures include the proportion of people aged 50 to 59 years with whom colorectal cancer screening is discussed; the proportion of people aged 60 to 74 undergoing FOBT or FS at recommended intervals; interval cancers diagnosed after a negative screening test; harms of follow-up testing; and colorectal cancer incidence and mortality. The task force also suggests measuring use of screening colonoscopy and screening with gFOBT or FS in people aged 75 years and older.

Implementation Tools

Audit Criteria/Indicators

Foreign Language Translations

Mobile Device Resources

Patient Resources

Quick Reference Guides/Physician Guides

Resources

Staff Training/Competency Material

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Staying Healthy

IOM Domain

Effectiveness

Patient-centeredness

Identifying Information and Availability

Bibliographic Source(s)

Canadian Task Force on Preventive Health Care. Recommendations on screening for colorectal cancer in primary care. CMAJ. 2016 Mar 15;188(5):340-8. [44 references] PubMed

Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2016 Mar 15

Guideline Developer(s)

Canadian Task Force on Preventive Health Care - National Government Agency [Non-U.S.]

Source(s) of Funding

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Guideline Committee

Canadian Task Force on Preventive Health Care (CTFPHC)

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Financial Disclosures/Conflicts of Interest

The views of the funding bodies have not influenced the content of the guideline; competing interests have been recorded and addressed.

Competing Interests: none declared

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: Colorectal cancer screening. Recommendation statement from the Canadian Task Force on Preventive Health Care. CMAJ 2001;165:206-8. [20 references]

This guideline meets NGC's 2013 (revised) inclusion criteria.

Guideline Availability

Available from the Canadian Task Force on Preventive Health Care (CTFPHC) Web site .

Availability of Companion Documents

The following are available:

- Screening for colorectal cancer. Hamilton (ON): Evidence Review and Synthesis Centre Team, McMaster University; 2014 Aug. 119 p. Available from the Canadian Task Force on Preventive Health Care (CTFPHC) Web site.
- Recommendations on screening for colorectal cancer in primary care. Online appendices 1-5. Ottawa (ON): Canadian Task Force on Preventive Health Care; 2016. Available from the Canadian Medical Association Journal (CMAJ) Web site.
- Screening for colorectal cancer—clinician summary. Ottawa (ON): Canadian Task Force on Preventive Health Care; 2016. Available in English and French from the CTFPHC Web site.
- Colorectal cancer—clinician recommendation table. Ottawa (ON): Canadian Task Force on Preventive Health Care; 2016. 1 p. Available in English and French from the CTFPHC Web site.
- Colorectal cancer—excluded studies. Ottawa (ON): Canadian Task Force on Preventive Health Care; 2016. 45 p. Available from the CTFPHC Web site.
- Zafari Z, Bryan S, Mitton C, Sadatsafavi M. Evaluating the cancer risk management model (CRMM) – colorectal cancer module. Vancouver: Centre for Clinical Epidemiology and Evaluation, Vancouver Coastal Health Institute; 2015 May 21. 18 p. Available from the CTFPHC Web site.
- Colorectal cancer—CMAJ author podcast. Available from the CTFPHC Web site.
- Recommendations on screening for colorectal cancer in primary care. Continuing medical education (CME) course. Ottawa (ON): Canadian Task Force on Preventive Health Care; 2016 Mar 15. Available from the CMAJ Web site.
- GRADE (Grades of Recommendation, Assessment, Development, and Evaluation). Ottawa (ON): Canadian Task Force on Preventive Health Care; 2011. 2 p. Available in English and French from the CTFPHC Web site.
- Canadian Task Force on Preventive Health Care procedure manual. Ottawa (ON): Canadian Task Force on Preventive Health Care; 2014 Mar. 83 p. Available from the CTFPHC Web site.

There is a CTFPHC mobile app for primary care practitioners available for download from the CTFPHC Web site.

Patient Resources

The following is available:

- Colorectal cancer—patient FAQ. Ottawa (ON): Canadian Task Force on Preventive Health Care; 2016. 1 p. Available in English and French from the Canadian Task Force on Preventive Health Care (CTFPHC) Web site.

Please note: This patient information is intended to provide health professionals with information to share with their patients to help them better understand their health and their diagnosed disorders. By providing access to this patient information, it is not the intention of NGC to provide specific medical advice for particular patients. Rather we urge patients and their representatives to review this material and then to consult with a licensed health professional for evaluation of treatment options suitable for them as well as for diagnosis and answers to their personal medical questions. This patient information has been derived and prepared from a guideline for health care professionals included on NGC by the authors or publishers of that original guideline. The patient information is not reviewed by NGC to establish whether or not it accurately reflects the original guideline's content.

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